CLAIMS

I claim:

1. A method of distributing data in a network comprising a plurality of mobile nodes and at least a first fixed node, wherein at least a portion of the network for communicating with said mobile nodes is wireless, said method comprising the steps of:

(1) transmitting data via said wireless portion of said network from said fixed node to at least a first of said mobile nodes that is within wireless transmission range of said fixed node; and

(2) transmitting said data from said first mobile node to a second of said mobile nodes responsive to said first mobile node coming within wireless transmission range of said second mobile node.

2. The method of claim 1 further comprising the steps of:

(3) before performing step (2), determining if said second mobile node already has said data;

wherein step (2) is performed only if said second mobile node does not already have said data.

3. The method of claim 2 wherein step (3) comprises the steps of:

(3.1) said mobile nodes maintaining a list of file names of files that are to be synchronized with corresponding files of said fixed node;

(3.2) for each of said file names on said list, comparing said corresponding file of said first mobile node with said corresponding file of said second mobile node to determine if they are synchronized; and

(3.3) if they are not synchronized, performing step (2);

wherein, in step (2), the two files are synchronized to a one of said two files that is more recent.

4. The method of claim 3 wherein said files have a time stamp associated therewith and wherein step (3.2) comprises comparing said time stamps of said two files.

5. The method of claim 1 wherein step (1) comprises the steps of:

(1.1) said first mobile nodes issuing a request to said fixed node for said data;

(1.2) responsive to receipt of said request from said first mobile node, said fixed node transmitting said data to said at least one mobile node.

6. The method of claim 5 wherein step (1.1) is performed periodically.

7. The method of claim 1 further comprising a second fixed node and wherein said second fixed node cannot communicate directly with said first fixed node, said method further comprising the steps of:

(5) transmitting data from a mobile node to said second fixed node when said mobile node comes within wireless transmission range of said second fixed node.

8. The method of claim 7 further comprising the step of:

(6) before performing step (5), determining if said mobile node already has said data;

wherein step (5) is performed only if said fixed node does not already have said data.

9. The method of claim 8 wherein step (6) comprises the steps of:

(6.1) said mobile node and said fixed node maintaining a list of file names of files that are to be synchronized with corresponding files of said fixed node;

(6.2) for each of said file names on said list, comparing said corresponding file of said mobile node with said corresponding file of said fixed node to determine if they are synchronized; and

(3.3) if they are not synchronized, performing step (2);

wherein, in step (2), the two files are synchronized to a recent one of said two files that is more.

10. A method of distributing data in a network comprising a plurality of mobile nodes and at least a first fixed node, wherein at least a portion of the network for communicating with said mobile nodes is wireless, said method comprising the steps of:

(1) said mobile nodes issuing requests via said wireless portion of said network for data from said fixed node;

(2) responsive to receipt of said requests, said fixed node transmitting said data via said wireless portion of said network to said mobile nodes from which it receives said requests;

(3) if a mobile node does not receive said data requested in step (1) from said fixed node, said mobile node issuing a request for said data from other mobile nodes; and

(4) if another mobile node receives said request issued in step (3) and has said requested data, said another mobile node transmitting said requested data to said requesting mobile node.

11. The method of claim 10 further comprising the steps of:

(5) each said mobile node maintaining a list of data items that are to be synchronized on said nodes of said network.

12. The method of claim 11 wherein:

step (1) comprises requesting synchronization of said data items with said fixed node:

step (2) comprises synchronizing said data items in said mobile nodes with said data items of said fixed node;

step (3) comprises requesting synchronization of said data items with a mobile node: and

step (4) comprises synchronizing said data items between said requesting mobile node and said another mobile node.

13. The method of claim 12 wherein step (4) comprises:

(4.1) determining which of said requesting mobile node and said another mobile node has more accurate data corresponding to said data items; and

(4.2) transmitting data from said requesting mobile node to said another mobile node with respect to those data items for which said requesting mobile node has more accurate data; and

(4.3) transmitting data from said another mobile node to said requesting mobile node with respect to those data items for which said requesting mobile node has more accurate data.

14. The method of claim 13 wherein step (5) comprises maintaining a list of one or more of file names and directory names requiring synchronization.

15. The method of claim 14 wherein said one or more of said files and directories corresponding to said file names and directory names have a time stamp associated therewith and wherein step (4.1) comprises determining which mobile node has said data items bearing a later time stamp.

16. The method of claim 10 further comprising a second fixed node wherein said second fixed node cannot communicate

directly with said first fixed node, said method further comprising the step of:

(6) transmitting data from a mobile node to said second fixed node when said mobile node comes within wireless transmission range of said second fixed node.

17. A method of distributing data in a network comprising a plurality of mobile nodes and at least a first fixed node, wherein at least a portion of the network for communicating with said mobile nodes is wireless, said method comprising the steps of:

(1) said mobile nodes maintaining a list of data items that are to be synchronized to said data of first fixed node corresponding to said data items;

(2) if a mobile node is within wireless transmission range of said first fixed node, synchronizing said data corresponding to said data items at said mobile node with said data corresponding to said data items at said first fixed node;7

(3) if a mobile node is not within wireless transmission range of said first fixed node and is within wireless transmission range of another mobile node, synchronizing said data corresponding to said data categories at said mobile node

with said data corresponding to said data items said another mobile node.

18. The method of claim 17 further comprising a second fixed node wherein said second fixed node cannot communicate directly with said first fixed node, said method further comprising the step of:

(4) if a mobile node is within wireless transmission range of said second fixed node, synchronizing said data corresponding to said data items at said second fixed node with said data corresponding to said data items at said mobile node.

19. A mobile network node for communicating with a server node as well as other mobile network nodes via a wireless portion of a network comprising:

a memory for storing data;

a radio for wirelessly communicating via said wireless portion of said network;

a first circuit for synchronizing data stored in said memory with corresponding data stored in said first server node via said radio;

a second circuit for synchronizing data stored in said memory with corresponding data stored in another mobile node if

said mobile node cannot communicate with said server node, but can communicate with another mobile network node.

20. The client radio of claim 19 wherein a list of data categories to be synchronized is maintained in said memory and said first and second circuits for synchronizing synchronize data corresponding to said categories with data corresponding to said categories at said base node and said another client radio, respectively.